

### Remarks

This is responsive to the Office Action mailed May 10, 2006. The amendments and remarks herein are proper, are supported by the specification, and do not include new matter.

### Claim Objection

Claim 29 still stands objected to for informality, in that it allegedly lacks indentation and is allegedly only a preamble. Applicant respectfully traverses the characterization that the claim as formerly presented was only a preamble.

Applicant reiterates in rebuttal to Examiner's stating that claim 29 "merely recites...the intended use of a structure...." that there is clear basis in the law that when the structure-connoting term "circuit" is coupled with a description of the circuit's operation, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art. *Linear Technology Corp. v. Impala Linear Corp.* 72 USPQ2d 1065 (Fed. Cir. 2004)

Also, applicant acknowledges that 37 CFR 1.75(e)(i) states that where multiple steps are recited they should be separated by an indentation. Applicant reiterates that the Examiner's requirement for indentation in claim 29 is form over substance because the recited description of the circuit operation does not have multiple elements or steps.

Nevertheless, solely in order to facilitate progress on the merits by obviating the present objection, Applicant has amended claim 29 without prejudice to indent all the language following the transition term "comprising." Withdrawal of the objection to claim 29 is respectfully requested.

Applicant furthermore respectfully traverses the Examiner's mischaracterization of claims 28 and 29 in stating: "Below, since the preamble of claim 29 recites the same limitations as in claim 28, for now, the Examiner applies the same prior art rejection for claim 29 as for claim 28." (Office Action of 5/10/2006, pg. 3) Applicant reiterates that claim 28 recites a data storing and retrieving apparatus reciting a means for predicting error in means plus function format, while claim 29 recites an emulation system reciting a circuit for predicting error rate performance. Contrary to the Examiner's statement, claim 29 does not recite the same limitations as claim 28.

**Rejection Under 35 USC 112 Second Paragraph**

Claims 28 and 29 stand rejected for allegedly being indefinite.

Applicant reiterates that claim 28 was amended to recite *means for predicting error rate performance in relation to a selected digital data configuration of a plurality of different digital data configurations for both the same input data and the same output data* in order to more particularly distinguish over Makansi '959, which encodes and decodes the data only once (see Applicant's Response of 3/8/2005, ppg. 18-19).

The Examiner views this language as confusing and indefinite. However, the skilled artisan would understand that the present embodiments stores both the input data and the output data to memory, then places both the stored input data and the stored output data in a selected one of a plurality of digital configurations, independently of each other. That is, for example, in FIG. 12 the stored input data in block 322 is digitally configured into block 342 independently of the stored output (readback) data in block 324 that is digitally configured in block 344. The only "correspondence" of any relevance is that the stored output data in block 324 is readback data from the stored input data in block 322. For error rate performance the Examiner's suggested "corresponding" term is actually confusing because it is precisely the lack of correspondence between the input and output data that the present embodiments reveals. That is, the number of errors in comparing the input data and output data will likely vary for different digital configurations. Applicant is willing to consider clarifying language, but believes the Examiner's "corresponding" language is ambiguous and mischaracterizes the embodiments as claimed. Applicant believes a mutually agreeable resolution to this issue can be found quickly if the Examiner grants the requested telephone interview request. Reconsideration and withdrawal of the present rejection of claim 28 are respectfully requested.

Applicant has amended claim 29 without prejudice, as discussed above, to obviate the rejection. Reconsideration and withdrawal of the rejection of claim 29 are respectfully requested.

**Rejection Under 35 USC 103(a)**

Claims 1, 4-6, 11, 28 and 29 stand rejected as being unpatentable over Ott '264 in view of Makansi '959. This rejection is respectfully traversed.

Claim 1

No prima facie case of obviousness has been substantiated because the cited references do not teach or suggest all the features of claim 1, and because no evidence has been produced that a skilled artisan would be motivated to combine the references to arrive at the present invention. If the Examiner does not produce a *prima facie* case, then Applicant is under no obligation to submit evidence of nonobviousness.

The Examiner is peculiarly preoccupied with the term "transmitting," which term is not recited in claim 1:

Ott teaches a digital data transmission channel 113 for transmitting input data through a physical data channel...and a circuit connected to the digital data channel which can characterize the transmitted input data...(See circuits 102, 103, 104, 110, 111 and 112 in Figure 1 which characterize transmitted input data and the retrieved output data in at least two alternative digital configurations.... (Office Action of 5/10/2006, pg. 5)

Applicant agrees with the Examiner to the extent that Ott '264 fails to teach or suggest *a digital channel which stores input data...and a circuit connected to the digital data channel which can characterize the stored input data and the retrieved output data in at least two alternative digital configurations....* (Office Action of 5/10/2006, pg. 6)

However, Applicant reiterates that Makansi '959 fails to cure the deficient teaching of Ott '264 in that it does not teach or suggest *characterize the stored input data*, but rather only discloses storing the characterized data. That is, Makansi '959 encodes the data in blocks 7a-7c before storing it in block 2 of FIG. 1 (see Applicant's Response of 3/8/2006, ppg. 14-15). Accordingly, the Examiner has not substantiated a prima facie case of obviousness because the cited references do not teach or suggest all the recited features of claim 1.

Also, for a prima facie case of obviousness to exist, there must be an objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art that would lead an individual to combine their relevant teachings of the references. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). The motivation may come explicitly from statements in the prior art, from knowledge of one of ordinary skill in the art, or even in the nature of the problem to be solved. *In re Kotzab*, 217 F.3d 1365, 1369 (Fed. Cir. 2000) The presence or absence of motivation is a question of fact, and the evidence that motivation

exists must be clear and particular. *In re Dembiczak*, 175 F.3d 994, 1000 (Fed. Cir. 1999). However, generalized statements of advantages or possibilities by an Examiner, without a bona-fide regard to the desirability or feasibility of modifying the cited references, does not meet the evidentiary requirements for substantiating a *prima facie* case of obviousness. Given the subtle but powerful attraction of a hindsight-based obviousness analysis, a rigorous application of the requirement of an evidentiary basis for the motivation must be followed. *In re Dembiczak*, at 999.

In the present case the skilled artisan will readily recognize that neither Ott '264 nor Makansi '959 teach or suggest *a circuit...which can characterize the stored input data and the retrieved output data in at least two alternative digital configurations and predict error rate performance in relation to a first of the alternative digital configurations for both the input data and output data and, alternatively, to a second of the alternative digital configurations for both the input data and output data*. Even if the cited references did disclose or suggest all the features of the claim 1, which they do not, the Examiner provides no substantiated basis for express motivation to combine and/or modify the cited references to arrive at the present embodiments as claimed. In the absence of express motivation to combine the references, a generalized statement that modifications of the prior art to meet the claimed invention would have been within the knowledge of a skilled artisan because all aspects of the claimed invention are individually taught by different references (in the Examiner's view) is not sufficient to substantiate the motivation or suggestion required by a bona fide *prima facie* case of obviousness. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993); *In re Kotzab*, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000); *Al-Site Corp. v. VSI Int'l Inc.*, 50 USPQ2d 1161 (Fed. Cir. 1999); MPEP 2143.01.

Applicant believes the Examiner would agree that Ott '264 teaches an error rate determination on a non-stored continuous input signal. Makansi '959 teaches storing input data after characterizing it to only one digital configuration. Neither of the cited references teaches or suggests storing input data and output data and then characterizing both data in a selected one of a plurality of different digital configurations. Makansi '959 would certainly not motivate the skilled artisan to determining an error rate at different RLL configurations for the input and output data stored in a particular zone. Such a suggestion would defeat the

purpose of Makansi '959, which maintains only one predetermined RLL configuration within each of the predetermined zones.

The only way the Examiner is able to supply the *a circuit...which can characterize the stored input data and the retrieved output data in at least two alternative digital configurations and predict error rate performance in relation to a first of the alternative digital configurations for both the input data and output data and, alternatively, to a second of the alternative digital configurations for both the input data and output data* limitation is via improper hindsight reconstruction. The Examiner has not pointed to any passage of either cited reference that supplies this limitation, or that motivates the skilled artisan to perform an error determination for data stored at a particular location at two or more digital configurations. The only place the Examiner can find this limitation is by using the Applicant's disclosure against it to extrapolate the misplaced generalizations of what "could be" from the related art. In this case where the entirety of the legal conclusion of obviousness rests on the Examiner's generalizations, there is lacking the requisite concrete evidence in the record to support them. *In re Zurko*, 258 F.3d 1379, 1385-86 (Fed. Cir. 2001) Rather, the only "evidence" is what the Examiner views to be "well recognized" or what the skilled artisan would be "well aware of."

Accordingly, the cited references certainly cannot substantiate an obviousness rejection over amended claim 1 because the cited references do not, alone or together, teach or suggest all the features as claimed. Furthermore, there is lacking the concrete evidence in the record to substantiate a motivation to combine and modify the cited references to arrive at the present embodiments as claimed, as discussed above. Reconsideration and withdrawal of the present rejection of claim 1 and the claims depending therefrom are respectfully requested.

#### Claim 28

Applicant reiterates that no prima facie case of obviousness has been substantiated because the cited references do not teach or suggest all the features of claim 28, and because no evidence has been produced that a skilled artisan would be motivated to combine the references to arrive at the present invention (see Applicant's Response of 3/8/2005, ppg. 17-

19). If the Examiner does not produce a *prima facie* case, then Applicant is under no obligation to submit evidence of nonobviousness.

No *prima facie* case of obviousness has been substantiated because the cited references do not, neither alone nor together, teach or suggest *means for predicting error rate performance* as in the present embodiments as claimed. Applicant again reiterates that claim 28 is a proper linking claim written in means plus function format in accordance with 35 U.S.C. §112, sixth paragraph (MPEP 809.03). The Applicant has identified the function associated with the recited “means” element as being the efficient prediction of error rate in a circuit storing input data and retrieving output data from a storage medium, by storing both the input data and the output data once and then arranging the stored data in different configurations for predicting the error. (see, for example, specification paragraph [0078]) The Examiner is obliged as a matter of law to construe this means element as the disclosed structure, and equivalents thereof, that are capable of the identical function. See *B. Braun Medical, Inc. v. Abbott Lab.*, 43 USPQ2d 1896, 1900 (Fed. Cir. 1997); *In re Donaldson Co. Inc.*, 26 USPQ2d 1845 (Fed. Cir. 1994)(*en banc*); *In re Dossel*, 42 USPQ2d 1881 (Fed. Cir. 1997); *Supplemental Examination Guidelines for Determining the Applicability of 35 U.S.C. 112, Para. 6*, 65 FR 38510. Failure to do so constitutes reversible error.

In some embodiments the disclosed structure for carrying out the claimed functionality is shown in FIG. 12, including the allocated portions of RAM for storing the input and readback data once, in RAM 322, 324, respectively, and for storing the multiple configurations of the input and readback data in RAM 342, 344, respectively. The disclosed structure further includes the symbol comparator 326 and the interleave counter 346, as well as executable instructions stored in memory for performing the CHANNEL PERFORMANCE CHARACTERIZATION method of FIG. 11 with this disclosed structure. Once this means-plus-function claim is properly construed, it is clear to the skilled artisan that the cited references fail to disclose any structure that is capable of the identical function as claimed. Furthermore, for the same reasons discussed above, no *prima facie* case of obviousness has been substantiated because the only way that the Examiner can supply the *means for predicting error rate performance* is by improper hindsight reconstruction.

Accordingly, the cited references certainly cannot substantiate an obviousness rejection over amended claim 28 because the cited references do not, alone or together, teach

or suggest all the features as claimed. Furthermore, there is lacking the concrete evidence in the record to substantiate a motivation to combine and modify the cited references to arrive at the present embodiments as claimed, as discussed above. Reconsideration and withdrawal of the present rejection of claim 28 and the claims depending therefrom are respectfully requested.

#### Claim 29

Applicant reiterates that no prima facie case of obviousness has been substantiated because the cited references do not teach or suggest all the features of claim 29, and because no evidence has been produced that a skilled artisan would be motivated to combine the references to arrive at the present invention (see Applicant's Response of 3/8/2005, ppg. 19-20). If the Examiner does not produce a *prima facie* case, then Applicant is under no obligation to submit evidence of nonobviousness.

No prima facie case of obviousness has been substantiated because the cited references do not, neither alone nor together, teach or suggest *characterizing both the stored data... in a selected digital configuration from a plurality of different selectable digital configurations*, as in the present embodiments as claimed.

Applicant agrees with the Examiner to the extent that Ott '264 does not teach or suggest *characterizing both the stored data...* However, Applicant submits that Makansi '959 does not cure the deficiency because Makansi '959 does not teach or suggest *characterizing both the stored data...*; rather, Makansi '959 only teaches or suggests storing characterized data. Again, Makansi '959 first encodes the data in block 7a – 7c and then stores the encoded data in block 2. Accordingly, the cited references do not substantiate a prima facie case of obviousness for failure to teach or suggest all the recited features of claim 29.

Furthermore, for the same reasons discussed above, no prima facie case of obviousness has been substantiated because the only way that the Examiner can supply the *characterizing both the stored data* is by improper hindsight reconstruction.

Accordingly, the Examiner has failed to substantiate a *prima facie* case of obviousness over claim 29 because the cited references do not, alone or together, teach or suggest all the features as claimed. Furthermore, there is lacking the concrete evidence in the

record to substantiate a motivation to combine and modify the cited references to arrive at the present embodiments as claimed, as discussed above. Reconsideration and withdrawal of the present rejection of claim 29 and the claims depending therefrom are respectfully requested.

#### Rejection Under 35 USC 103(a)

Claim 30 stands rejected as unpatentable over Ott '264 in view of McNeil '305.

Applicant respectfully traverses the rejection.

No prima facie case of obviousness has been substantiated because the cited references do not teach or suggest all the features of claim 30, and because no evidence has been produced that a skilled artisan would be motivated to combine the references to arrive at the present invention. If the Examiner does not produce a *prima facie* case, then Applicant is under no obligation to submit evidence of nonobviousness.

No prima facie case of obviousness has been substantiated because, as for claim 29 above, the cited references do not, neither alone nor together, teach or suggest *characterizing stored data in a selected digital configuration from a plurality of selectable digital configurations...*, as in the present embodiments as claimed.

As for claim 1 above, Applicant agrees with the Examiner to the extent that Ott '264 fails to teach or suggest *characterizing stored data in a selected digital configuration....* (Office Action of 5/10/2006, pg. 6) Applicant also agrees with the Examiner to the extent that McNeil '305 does not teach or suggest *characterizing stored data in a selected digital configuration from a plurality of selectable digital configurations....* (Office Action of 12/8/2005, pg. 4).

For a prima facie case of obviousness to exist, there must be an objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art that would lead an individual to combine their relevant teachings of the references. *In re Fine* The motivation may come explicitly from statements in the prior art, from knowledge of one of ordinary skill in the art, or even in the nature of the problem to be solved. *In re Kotzab* The presence or absence of motivation is a question of fact, and the evidence that motivation exists must be clear and particular. *In re Dembiczak* However, generalized statements of advantages or possibilities by an Examiner, without a bona-fide regard to the desirability or feasibility of modifying the cited references, does not meet the evidentiary requirements for



substantiating a *prima facie* case of obviousness. Given the subtle but powerful attraction of a hindsight-based obviousness analysis, a rigorous application of the requirement of an evidentiary basis for the motivation must be followed. *In re Dembiczak*, at 999.

In the present case the skilled artisan will readily recognize that neither Ott '264 nor McNeil '305 teach or suggest *characterizing stored data in a selected digital configuration from a plurality of selectable digital configurations* as claimed. Even if the cited references did disclose or suggest all the features of the claim 30, which they do not, the Examiner provides no substantiated basis for express motivation to combine and/or modify the cited references to arrive at the present embodiments as claimed. In the absence of express motivation to combine the references, a generalized statement that modifications of the prior art to meet the claimed invention would have been within the knowledge of a skilled artisan because all aspects of the claimed invention are individually taught by different references (in the Examiner's view) is not sufficient to substantiate the motivation or suggestion required by a bona fide *prima facie* case of obviousness. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993); *In re Kotzab*, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000); *Al-Site Corp. v. VSI Int'l Inc.*, 50 USPQ2d 1161 (Fed. Cir. 1999); MPEP 2143.01.

Applicant believes the Examiner would agree that Ott '264 teaches an error rate determination on a non-stored continuous input signal. McNeil '305 teaches varying off-track margin, timing margin, and threshold margin against a predetermined soft error rate in order to set channel parameters of bandwidth, boost, and write current. Neither of the cited references teaches or suggests storing input data and output data and then characterizing both data in a selected one of a plurality of different digital configurations.

The only way the Examiner is able to supply the *characterizing stored data in a selected digital configuration from a plurality of selectable digital configurations* limitation is via improper hindsight reconstruction. The Examiner has not pointed to any passage of either cited reference that supplies this limitation, or that motivates the skilled artisan to perform an error determination for data stored at a particular location at two or more digital configurations. The only place the Examiner can find this limitation is by using the Applicant's disclosure against it to extrapolate the misplaced generalizations of what "could be" from the related art. In this case where the entirety of the legal conclusion of obviousness rests on the Examiner's generalizations, there is lacking the requisite concrete

evidence in the record to support them. *In re Zurko*, 258 F.3d 1379, 1385-86 (Fed. Cir. 2001) Rather, the only “evidence” is what the Examiner views to be “well recognized” or what the skilled artisan would be “well aware of.”

Accordingly, the cited references certainly cannot substantiate an obviousness rejection over amended claim 30 because the cited references do not, alone or together, teach or suggest all the features as claimed. Furthermore, there is lacking the concrete evidence in the record to substantiate a motivation to combine and modify the cited references to arrive at the present embodiments as claimed, as discussed above. Reconsideration and withdrawal of the present rejection of claim 30 and the claims depending therefrom are respectfully requested.

Furthermore, for the same reasons discussed above, no *prima facie* case of obviousness has been substantiated because the only way that the Examiner can supply the *characterizing stored data* is by improper hindsight reconstruction.

Accordingly, the Examiner has failed to substantiate a *prima facie* case of obviousness over claim 30 because the cited references do not, alone or together, teach or suggest all the features as claimed. Furthermore, there is lacking the concrete evidence in the record to substantiate a motivation to combine and modify the cited references to arrive at the present embodiments as claimed, as discussed above. Reconsideration and withdrawal of the present rejection of claim 30 are respectfully requested.

#### Allowance

Applicant gratefully acknowledges the allowance of claims 15-26.

**Conclusion**

This is a complete response to the Office Action of May 10, 2006.

The Applicant has filed herewith a request for telephone interview which is requested to be held before the Examiner issues the next action on the merits. The Applicant respectfully requests that all of the pending claims be passed to issuance.

Respectfully submitted,

By: 

Mitchell K. McCarthy, Registration No. 88,794  
Randall K. McCarthy, Registration No. 39,297  
Fellers, Snider, Blankenship, Bailey and Tippens  
100 N. Broadway, Suite 1700  
Oklahoma City, Oklahoma 73102  
Telephone: (405) 232-0621  
Facsimile: (405) 232-9659  
Customer No. 33900